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FINAL WASTE MANAGEMENT PLAN FORMER NAS BRUNSWICK ME

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TETRA TECH EC INC

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC
REMEDIAL ACTION CONTRACT (RAC)
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FINAL
WASTE MANAGEMENT PLAN
FORMER NAVAL AIR STATION BRUNSWICK
BRUNSWICK, MAINE

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Prepared for

Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
9742 Maryland Avenue, Building Z-144
Norfolk, Virginia 23511

and

Base Realignment and Closure
Program Management Office, Northeast
4911 South Broad Street
Philadelphia, PA 19112-1303

Prepared by
Tetra Tech EC, Inc.
5250 Challedon Drive
Virginia Beach, Virginia 23462

Revision	Date	Prepared by	Approved by	Pages Affected
0	08/12/14	S. Montgomery	G. Joyce	All

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ABBREVIATIONS AND ACRONYMS

ACM	asbestos-containing material
ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
Co-60	Cobalt-60
Cs-137	Cesium-137
CSO	Caretaker Site Office
CTO	contract task order
DOT	Department of Transportation
DRMO	Defense Reutilization and Marketing Office
EPA	Environmental Protection Agency
ESQ	Environmental Safety and Quality
H-3	Tritium
HRA	Historical Radiological Assessment
IR	Installation Restoration (Program)
LDR	land disposal restriction
LLRW	low-level radioactive waste
NASB	Naval Air Station Brunswick
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NOSSA	Naval Ordnance Safety and Security Activity
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
POTW	publicly owned treatment works
PPE	personal protective equipment
ppm	parts per million
Ra-226	radium-226
RCRA	Resource Conservation and Recovery Act
RML	Radioactive Materials License
SHM	Safety and Health Manager
Sr-90	Strontium-90
Th-232	Thorium-232
TSDF	treatment, storage, and disposal facility
TtEC	Tetra Tech EC, Inc.
U-238	Uranium-238
WMP	Waste Management Plan

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1.0 INTRODUCTION

Tetra Tech EC, Inc. (TtEC) has prepared this Waste Management Plan (WMP) for radiological, and other environmental remedial related work tasks at ten sites at the former Naval Air Station Brunswick (NASB) for the United States Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC), Atlantic under a Removal Action Contract, N62470-13-D-8007, Contract Task Order (CTO) WE09. The work will be performed under TtEC's Nuclear Regulatory Commission Radioactive Materials License (RML), license number 29-31396-01 or Maine Agreement State RML (as required).

The purpose of this WMP is to present the waste management practices and procedures to be followed to manage all waste streams during performance of the various field activities at NASB. Procedures for the management and transfer of low-level radioactive waste (LLRW) are addressed in general in this plan and will be further outlined in the Memorandum of Understanding with the LLRW contractor prior to mobilization (prepared separately from this WMP). All LLRW generated will be transferred to the Navy's (Army Joint Munitions Command) radioactive waste disposal contactor for characterization and disposal.

This WMP identifies onsite waste management activities to be conducted such as accumulation and containerization, waste characterization, profiling, marking, and labeling as well as manifesting and offsite transport and disposal of waste. A secondary goal of this plan is to ensure that waste minimization practices are followed, to the extent practicable, to reduce the volume of waste that will be generated, stored, and removed from the site for disposal.

1.1 Site History

NASB is located in Cumberland County, Maine, about 25 miles north of Portland, Maine and 31 miles south of Augusta, Maine. The Main Station lies between the Androscoggin River to the north and Casco Bay to the south and at one time encompassed approximately 3,200 acres prior to Base Realignment and Closure (BRAC). It is bordered by City of Brunswick to the east and west. The facility includes six principal areas: the Main Station, the Topsham Annex, the McKeen Street Housing Complex, the former East Brunswick Remote Radio Transmitter Site, and Rake Stations 1 and 2. NASB was officially closed in 2011 in accordance with the 2005 BRAC Law. As of December 2013, approximately 80 percent of the NASB property has been transferred out of Navy control. The ten sites at which the radiological and other environmental remedial related work tasks are to be performed are currently on Navy owned property and are summarized below. One additional site, the Picnic Pond is being addressed under a separate plan.

The Historical Radiological Assessment (HRA) was revised in 2013 and finalized in March 2014 (NAVSEA, 2014). Sites described below that are listed as radiologically impacted in the HRA, as well as several other areas identified in the Site Management Plan (ECC 2008) will require further radiological surveys as well as some degree of radiological materials removal to be performed, in addition to the chemical or munitions (performed by another contractor) related

remedial actions being performed at the ten sites. A brief description of the ten sites is provided below.

Quarry Area of Concern

The quarry is located southwest of the runways at the western boundary and is approximately four acres in size. Site investigations have discovered significant amounts of debris at the site, including munitions. It is suspected that the area was used as a dump site. During the site inspection performed in 2008, a rocket motor tail fin assembly was discovered on the surface of the Quarry Area of Concern. In 2009, the Naval Ordnance Safety and Security Activity (NOSSA) made a determination that there was at least a medium likelihood of encountering munitions-related items in the subsurface. Based on this determination, the Navy has included this area in the Military Munitions Response Program. Part of this site was also used for land farming petroleum contaminated soil in accordance with State of Maine requirements. Investigations accomplished to date have uncovered numerous Munitions and Explosives of Concern items and debris. The Quarry Area of Concern is also designated as a radiologically impacted site in the HRA and the radionuclides of concern (ROCs) are Cesium-137 (Cs-137), Radium-226 (Ra-226), Strontium-90 (Sr-90), and Uranium-238 (U-238).

Building 7/10 Groundwater Site

As part of a Resource Conservation Recovery Act (RCRA) closure action, a small parking lot area was evaluated for past contaminant releases. The parking lot area previously had several small buildings on it that were used for industrial operations. As a result of these operations, the solvent tetrachloroethene was found to be as high as 19 micrograms per liter (µg/L) in one groundwater monitoring well at the site. Benzene is also present in levels between 0 and 7.4 µg/L. Based on discussions with the regulatory agencies, the Navy will initiate a cleanup effort to address these low level volatile organic contaminants (VOCs) after the Navy has better defined the areal extent of the plume boundaries.

IR Site 7 Old Acid/Caustic Pit

IR Site 7 is a flat open clearing that is approximately 1.4 acres in size located in the northeast portion of NASB. The site is believed to have been used historically for disposal of acidic and caustic liquids, transformer oils, solvents, and miscellaneous liquids and was used more recently by the Defense Reutilization and Marketing Office (DRMO) facility as an outdoor storage and equipment laydown area. Approximately 400 cubic yards of soil (hot spots) was removed in 2002 (one third was disposed of off-site and the remainder was spread across the remainder of the site in six inch lifts). Cadmium-contaminated soils (ranging from 2.5 to 16.3 milligrams per kilogram [mg/kg]) still exist in several areas. The soils also contain elevated levels of manganese. The site has shallow groundwater depth (4 to 7 feet). Groundwater is also contaminated with cadmium ranging from 1 to 50 µg/L and the goal of the soil removal is to eliminate the continued source of groundwater cadmium contamination. The site is currently being managed by the Navy to control exposure to contaminants from soil and groundwater. IR Site 7 is also designated as a radiologically impacted site in the HRA and the ROCs include Cobalt-60 (Co-60), Cs-137, Tritium (H-3), Ra-226, Sr-90, Thorium-232 (Th-232), and U-238.

IR Site 9 Neptune Drive Disposal Area

IR Site 9 is a partially remediated waste disposal area occupying approximately 20 acres in the central portion of NASB. The site contains waste incinerator ash. Wastes reportedly dumped at this location include solvents that were burned on the ground, paint sludge, and wastes from the metal shop. Previous remedial actions for non-radiological contamination removed approximately 50,000 tons of contaminated soil. Clean fill was used to create a temporary cap (polyethylene liner, fill, and vegetation) over most of the remediated areas. However, remediation did not address waste material located under the roads or around the utilities and site investigations have confirmed that the boundary of the disposal area is larger than previously remediated. Based on recent data gap investigations, the soils at various depths may contain low level concentrations of metals such as arsenic (up to 19.9 mg/kg) and chromium (up to 35.5 mg/kg) as well as polynuclear aromatic hydrocarbons (PAHs), including carcinogenic PAHs such as benzo(a)anthracene (up to 19.9 mg/kg), benzo(a)pyrene (up to 15.8 mg/kg), benzo(b)fluoranthene (up to 21.2 mg/kg) as well as other PAHs above the U.S. Environmental Protection Agency (EPA) regional screening criteria. In addition, low-level VOCs such as tetrachloroethene may be present in some soil as a recent field screening using a photoionization detector (PID) detected up to 19.5 parts per million (ppm) during data gap sampling. IR Site 9 is also designated as a radiologically impacted site in the HRA and the ROCs include Co-60, Cs-137, Ra-226, Th-232, U-238, Sr-90, and H-3.

IR Sites 1 and 3 Hazardous Waste Burial Area

IR Site 1 (Orion Street Landfill) and IR Site 3 (Hazardous Waste Burial Area) are co-located in the central portion of NASB. IR Sites 1 and 3 are located immediately north of Building 642 and is approximately 10 acres in size and contains an estimated 300,000 cubic yards of waste. Prior disposal included domestic waste and refuse and debris including aircraft parts and construction debris as well as asbestos-containing materials (ACMs). The landfill also was used for disposal of waste oil, solvents, pesticides, herbicides, petroleum products, paints, and other various chemicals. Solvents were detected in soil jar headspace PID readings from waste zones within the landfill from 0.5 to 90 ppm. PAHs, the pesticide dieldrin, polychlorinated biphenyls (PCBs), dioxin, arsenic, and cadmium were also detected at low levels, but above EPA risk based cleanup levels. The landfill has a RCRA multilayer cap in place, which was constructed in 1995. IR Sites 1 and 3 are also designated as radiologically impacted sites in the HRA and the ROCs include Co-60, Cs-137, H-3, Ra-226, Sr-90, Th-232, and U-238.

Undocumented Former Orion Street Disposal Area

The Undocumented Former Orion Street Disposal Area is located at the corner of Orion Street and Merriconeag Drive. The exact size of the site is currently not known. The site was identified as an open disposal area where the Ground Electronics Division allegedly disposed of defective electronics components, including electron tubes. The Undocumented Former Orion Street Disposal Area is designated as a radiologically impacted site in the HRA and the ROCs include Co-60, Ra-226, Sr-90, and Th-232. The site is currently a vacant lot used for athletic activities.

DRMO Site

The DRMO Site consists of Building 584 (approximately 7,200 square feet) and the adjacent DRMO yard. The yard is an approximate 84,000 square foot asphalt paved surface adjacent to

Building 584. The eastern portion of Building 584 was built on top of the acid/caustic pit which is part of IR Site 4. The DRMO Site is designated as a radiologically impacted site in the HRA and the ROCs include Co-60, Cs-137, H-3, Ra-226, Sr-90, Th-232, and U-238.

IR Site 2/Orion Street Landfill (South)
IR Site 2 is located in the vicinity of the southern extent of the main runways within the restricted weapons compound area. The site is approximately three acres and was previously used as the primary landfill for NASB between 1945 and 1955 for disposal of domestic waste, hazardous materials, aircraft parts, and construction debris. All prior boring log soil samples had levels of contaminants that were below EPA risk based cleanup levels. A portion of this site has been capped with 15-inches of topsoil. Reportedly, wastes were incinerated on-site and buried in a two-acre pit (formerly a borrow pit). IR Site 2 is also designated as a radiologically impacted site in the HRA and the ROCs are Ra-226.

Building 9 MWR CPO Wardroom/VPU/Electronics and Ordnance Shop
Building 9 is approximately 8,888 square feet in size and was constructed in 1943. The building had several uses, including a laundry facility; electronics and ordnance shop (1950s to 1960s); Patrol Squadron Special Unit (VPU) (1970s to 1980s); and the Morale, Welfare, and Recreation Wardroom from 2006 to 2011. A radiological survey was completed that identified radiological contamination was present. Building 9 is designated as a radiologically impacted site in the HRA and the ROCs include Cs-137, H-3, Ra-226, Th-232, and U-238.

IR Site 6 Sandy Road Rubble and Asbestos Disposal Site
IR Site 6 is bordered by Sandy Road to the southeast and by a stream behind Building 516 to the north and is approximately 1 acre in size. At this site, a small depression was reportedly used for general disposal of construction debris, aircraft parts, and other non-putrescible wastes until the late 1970s. IR Site 6 is designated as a radiologically impacted site in the HRA and the ROCs for the site include C0-60, Cs-137, H-3, Ra-226, Sr-90, Th-232, and U-238.

1.2 Regulatory Framework

Environmental investigation and remediation activities are being conducted at NASB under the Department of Defense Installation Restoration (IR) Program in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and the Federal Facility Agreement between the EPA and MEDEP (Navy 1990). Under Executive Order 12580, the Navy is the lead agency responsible for implementation of the IR Program and the site investigation and remediation. Navy oversight is provided by EPA and the Maine Department of Environmental Protection Agency (MEDEP).

The removal actions undertaken at NASB will comply with the substantive requirements of the applicable or relevant and appropriate requirements (ARARs) as identified in the Feasibility Study (E. C. Jordan Co. 1992). This WMP identifies the substantive requirements of ARARs pertaining to onsite waste management activities as well as the laws and regulations that pertain

to offsite actions such as waste transportation and disposal on this project. Radiological ARARs pertaining to onsite management of radiological wastes are not included in this plan.

Only the substantive requirements of the regulations are considered as possible ARARs because CERCLA on-site response actions do not require permitting or compliance with other administrative requirements for CERCLA actions that are confined to the site. Any off-site actions, however, such as waste transport and off-site disposal must comply with all applicable regulatory requirements, not just substantive requirements. The Environmental Protection Plan includes additional ARARs with substantive requirements that pertain to onsite activities not related to waste management.

Project Action-Specific Waste Management ARARs:

- 40 CFR 265 Subpart I (MEDEP Chapter 854) – outlines use and management of containers, including use of containers that are in good condition and compatible with the waste placed within. Containers holding hazardous waste must be closed when not in use and containers must be managed such that they do not rupture or leak. Also contains requirements for separation of incompatible wastes.
- 40 CFR 268 – Land Disposal Restrictions (MEDEP Chapter 852) – waste that is land disposed must meet specified treatment standards before it is placed into a landfill. As an ARAR, this regulation would be applicable for the onsite placement of soils into the IR Sites 1 and 3 landfill onsite.

In Maine, the MEDEP manages and oversees the RCRA program. The following MEDEP (RCRA and solid waste) and U.S. Department of Transportation (DOT) laws and regulations are requirements for the actions conducted under this CTO, which pertain to offsite actions to be performed during waste management activities (administrative and substantive) and are also considered to be ARARs:

- MEDEP Chapter 800 - identifies certain substances as hazardous matter, discharges of which are subject to discharge removal, notification, reporting and other requirements under 38 M.R.S.A. §1317 *et seq*., and rules adopted thereunder.
- MEDEP Chapter 850 – require a determination of whether waste generated in the removal action is a hazardous waste.
- MEDEP Chapter 851 - establishes standards and requirements for persons who generate hazardous waste, including packaging, marking, labeling, and manifesting of hazardous wastes.
- MEDEP Chapter 852 - identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which such wastes may continue to be land disposed.
- MEDEP Chapter 853 – specifies the licensing requirement for transporters of hazardous waste.
- MEDEP Chapter 857 – specifies the requirements for hazardous waste manifests.

- 49 CFR Sections 107 and 171.1-172.558 -- governs transportation of hazardous materials (including hazardous wastes and/or hazardous substances off-site) and proper marking, labeling, and placarding requirements, and assignment of a proper shipping name.
  - 49 CFR Part 171, describes general requirements and hazardous waste shipments
  - 49 CFR Part 172, provides a table of hazardous materials and prescribing labeling and placarding
  - 49 CFR Part 173, provides general requirements for shipping and packaging by shippers
  - 49 CFR Part 177, regulates hazardous material shipment by highways
- 40 CFR Part 403; Article 2 Clean Water Act Pretreatment Standards for Privately Owned Treatment Works (POTW) discharges – Discharges of wastewater to POTW must comply with local POTW pretreatment numerical discharge requirements as well as not cause pass through or interference. The local numerical requirements will be evaluated and after sampling and analysis, discharges of non LLRW wastewater to POTW coordinated with the POTW operator.

1.3 Project Action Objectives

Based on past site history and results from the data gaps investigation, the Navy has determined that the above ten sites require radiological, munitions (to be performed by another contractor), and chemical investigative and remediation activities to allow property transfer to non-Navy entities. The project action objectives for the radiological and chemical investigative and remediation activities are to protect public health and welfare and the environment by physically removing and removing and/or capping chemical and radiological contaminated materials at the 10 sites.

The primary objectives for each of the sites are summarized below:

- IR Site 9 Neptune Drive Disposal Area – determine extent of waste ash material and to radiologically free release as much of the area as possible and minimize the size of the restricted release area.
- IR Site 7 Old Acid/Caustic Pit – achieve radiological free release of the site and remove the source of groundwater cadmium contamination.
- Quarry Area of Concern –radiologically free release as much of the area as possible and minimize the size of the restricted release area.
- Building 7/10 Groundwater Site – initiate treatment of VOC contaminated groundwater.
- IR Sites 1 and 3 Hazardous Waste Burial Area – Extend existing RCRA cap to include the Site 7 cadmium impacted soil (source of groundwater contamination) and radiologically free release as much of the area as possible and minimize the size of the restricted release area.
- Undocumented Former Orion Street Disposal Area – achieve radiological free release of the site.
- DRMO Site - achieve radiological free release of the site, including Building 584.

- IR Site 2/Orion Street Landfill (South) - cap debris north of existing capped area and to radiologically free release as much of the area as possible and minimize the size of the restricted release area.
- Building 9 MWR CPO Wardroom/VPU/Electronics and Ordnance Shop – achieve radiological free release of the building.
- IR Site 6 Sandy Road Rubble and Asbestos Disposal Site – Verify the construction debris and asbestos material have been removed and to achieve radiological free release of the site.

1.4 Project Points of Contact

Figure 1-1 presents the key individuals who will be responsible for the oversight and/or implementation of the field activities at NASB.

1.5 Updatingp the Waste Management Plan

This WMP will be updated as changes in site activities or conditions, wastestreams, or changes in applicable regulations occur. Revisions to this WMP will be reviewed and approved by the Navy.

1.6 Plan Organization

This WMP is organized as follows:

- **Section 1.0** provides the introduction, site history and current operations, regulatory framework, project objectives, and project points of contact.
- **Section 2.0** describes the potential waste streams, waste designation, and waste minimization process.
- **Section 3.0** provides information on waste accumulation and storage, and inspections and documentation.
- **Section 4.0** discusses radioactive waste accumulation and storage.
- **Section 5.0** describes the transportation and waste disposal requirements.
- **Section 6.0** presents the training and certification requirements.
- **Section 7.0** discusses documentation and records retention.
- **Section 8.0** presents the references cited in this document.

2.0 WASTE STREAMS AND DESIGNATION

All LLRW generated will be transferred to the Navy's (Army Joint Munitions Command) radioactive waste disposal contractor for characterization and disposal. Bins (or other approved containers) will be provided by the radioactive waste disposal contractor. If waste is not LLRW, TtEC will facilitate transport and disposal offsite to a licensed disposal or recycling facility. If the waste contains a CERCLA hazardous substance or waste, the facility will be approved to receive CERCLA waste. Soil will be transported offsite unless it is suitable for disposal in the Site 1/3 landfill and approved by the Navy (Generator) for placement in that landfill.

For this project, it is assumed that similar nonhazardous waste streams (e.g., building materials, used personal protective equipment [PPE], construction debris, green wastes, oily waste or sorbents, etc.) from multiple sites can be combined for disposal (e.g., need not be tracked independently by site); however the waste streams will not be co-mingled unless the wastes are compatible with each other, having similar contaminants and characteristics subject to the waste disposal facility profile. Additional care will be exercised for soils and wastewater generated at each site because site contaminants may be higher in these soils and different from site to site. Wastes will only be combined if the Navy permits and the facility waste profile allow them to be combined. The TtEC Waste Coordinator (TBD) will help establish onsite waste tracking and will designate which wastes can be consolidated prior to disposal with Navy coordination. A TtEC Environmental Safety and Quality (ESQ) Specialist will be consulted with as required for assistance and recommendation.

2.1 Anticipated Waste Streams

Site activities will consist of remediation of radiologically impacted soil, asphalt, debris, and building material surfaces until the following is achieved:

- Release criterion for ROCs in the soil is achieved.
- Surveys of the asphalt, concrete, debris, and building material surfaces meet the release criteria specified in Table 6-1 of the Basewide Radiological Management Plan (TtEC 2014).

The anticipated waste streams are listed below:

- Building materials (e.g., floor tiles, drywall, etc.)
- Soil (may also contain site contaminants, presently anticipated to be characterized as nonhazardous waste)
- Wastewater / decontamination water / development water / purge water
- Used PPE
- Used sampling supplies
- Construction debris (wood, metal, concrete, asphalt, etc.)
- Ordinary waste (e.g., paper material, plastic cups and bags, trash bags, food waste, and non-contaminated materials)
- Green waste / vegetation
- Oily rags and sorbents
- Sanitary wastes

If suspected ACM is encountered, it will be handled and removed by a qualified, licensed asbestos subcontractor and staged for disposal pending results of the radiological surveys. If the radiological surveys indicate the soil or building surfaces are radiologically impacted, this material will be classified as LLRW. Otherwise, this material will be transported to the disposal facility permitted to accept ACM.

If other unforeseen and unanticipated waste is encountered during the field activities (i.e., buried containers, other unforeseen contaminant, etc.) that are not discussed within this plan, field activities will cease and the Navy will be contacted to determine the next course of action. A Field Change Request Form will be completed that will address the removal, management, and characterization of the new waste stream, including the health and safety requirements to be implemented.

2.2 Waste Designation and Minimization

Waste characterization and designation for non-LLRW will be coordinated with the Caretaker Site Office (CSO) and disposal facilities to determine the sampling and analysis requirements to properly characterize the waste for transport and disposal. All project wastes must be properly characterized so they can be correctly managed. Waste will be sampled, as required, in a representative manner to characterize it in accordance with RCRA and MEDEP regulatory requirements and in accordance with disposal facility requirements. Waste will either be classified as hazardous waste (RCRA hazardous) or nonhazardous, depending on the characteristics of the waste and either sampling results or generator knowledge. At the present time, based on information regarding site contaminants, generation of hazardous waste is not anticipated. If samples for waste characterization are required, standard laboratory practices will be followed including container requirements, analytical method requirements, and laboratory quality control procedures. The off-site analytical laboratory selected to analyze waste samples for this project will be, at a minimum, certified by the State of Maine for all the analytical methods required for the project, as applicable. Additional state certifications may also be required by the disposal facility. In addition, the laboratory must have successfully achieved the Department of Defense Environmental Laboratory Accreditation Program certification prior to receipt of samples for analysis and also must maintain current status throughout the duration of the project. An ESQ Scientist will help determine the sampling and analysis required for the waste streams and will review all waste analytical data to determine waste characterization and disposition requirements for each waste stream.

To minimize the volume of all waste streams generated during the project, the following general guidelines will be followed:

- Waste material will not be contaminated unnecessarily.
- Waste material will not be comingled with other wastes (e.g., wastes from one site with another site) without consulting the Waste Coordinator.
- Work will be planned ahead.
- Material may be stored in large containers, but the smallest reasonable container will be used to transport the material to the location where it is needed.
- Cleaning and extra sampling supplies will be maintained outside any potentially contaminated area to keep the supplies clean and minimize additional waste generation.
- Mixing of detergents or decontamination solutions will be performed outside potentially contaminated areas.
- Drop cloths or other absorbent material will be used to contain small spills or leaks.

- Contaminated material will not be placed with clean material.
- Wooden pallets inside the exclusion zone will be covered with plastic.
- Material and equipment will be decontaminated and reused when practicable.
- Volume reduction techniques will be used when practicable.
- Waste containers will be examined to ensure that they are solidly packed to minimize the number of containers.
- Only waste containers adequately sized to contain the volume of waste generated will be used.
- Less hazardous substances will be used whenever possible (only the volume of standard solutions needed for testing will be brought; minimal amounts of decontamination water and solvent rinses will be used).

3.0 HAZARDOUS AND NONHAZARDOUS WASTE ACCUMULATION

The substantive requirements (for onsite activities) of the state and federal hazardous waste generation, characterization, accumulation, treatment, and management regulations of MEDEP Chapters Sections 850, 851, and 852, and 40 CFR Parts 261, 262, 264, 265, and 268, are applicable to the management of wastes generated during this project's activities. Off-site activities, such as waste transport and off-site disposal, as stated in Section 1.2, must comply with the full regulatory requirements, not just substantive requirements.

3.1 Waste Accumulation and Storage

Substantive requirements of the regulations cited above (for onsite activities) will be requirements for onsite waste management as applicable to the generation, storage, management, and accumulation of RCRA and non-RCRA hazardous wastes.

Although not considered substantive, some of the RCRA regulations that are administrative in nature are considered to be practices that should be followed, for instance the specific requirements that apply to the accumulation (inspections of accumulation areas, marking and labeling of hazardous wastes, application of accumulation start dates, etc.) of waste. Any RCRA wastes will be managed on-site in accordance with these regulations, including proper container use and segregation, and marking/labeling requirements. Nonhazardous wastes will also be managed by proper labeling and marking so that these wastes can be effectively managed and tracked and not unnecessarily contaminated..

3.1.1 Soil

Any excavated soil that is removed and cannot be reused on site or transferred for placement in the IR Sites 1 and 3 will be sampled and analyzed for the chemicals of concern for that site and per the disposal facility requirements for waste characterization purposes. Waste soil from one site will not be co-mingled with other site soil unless approved by the CSO and Navy after review of sampling analytical results.

The excavated soil will be sampled in a representative manner as soon as possible after generation and managed pending the sample results. Hazardous waste will be managed on-site to meet the administrative time limits for accumulation of less than 180 days as specified above, inspected every 7 calendar days, and will be packaged in containers in good condition that meet the DOT Hazardous Material Regulations packaging requirements for transport off-site. If the soil sample results indicate that the waste to be nonhazardous, the waste will be managed as nonhazardous waste. Soil generated from drilling activities (i.e., installation of injection points, groundwater monitoring wells, and direct push soil borings) will be containerized in 55-gallon (or smaller, as required) drums and the soil will be sampled and analyzed for the chemicals of concern for the site and in accordance with the disposal facility requirements. This soil will be managed as hazardous or non-hazardous based on existing soil sample data pending the sample results for the waste characterization sampling.

Soil that has been determined to be nonhazardous and not radiologically impacted will either be stockpiled or placed directly into roll-off bins or 55-gallon drums and stored in a location designated by the CSO pending transport and disposal to an approved nonhazardous waste disposal or recycling facility, as appropriate.

3.1.2 Construction Debris

Building material and debris that may be generated may include metal, wood, drywall, floor tiles, piping, conduit, asphalt, plastic, and concrete. Used PPE and sampling supplies that have been determined not to be radiologically impacted will be bagged and placed in the bin or container with the construction debris depending on where the used PPE and sampling supplies were generated. Construction debris such as concrete, asphalt, wood, and metal debris will be segregated and recycled off-site at appropriate facilities if deemed cost effective; otherwise, construction debris will be co-mingled for disposal at a nonhazardous waste landfill.

3.1.3 Wastewater and Waste Fluids

Any wastewater generated (for example, decontamination water generated from equipment and personnel decontamination, development water, and purge water) will be collected in containers such as Baker tanks, Rain for Rent® tanks, or 55-gallon drums and labeled as "Potentially Hazardous Waste – Pending Analysis." An accumulation start date will be noted on the label. Tanks will be temporarily staged within a predesignated and secondarily contained (unless tanks are double-walled) on-site waste accumulation area pending characterization and appropriate disposal. Tank trucks or drums will be used to transfer water from the point of generation to the tank storage area. Wastewater will be sampled and analyzed for the chemicals of concern for soil and groundwater, as applicable, and in accordance with the Brunswick Sewer District discharge permit for their POTW works located in Brunswick. If the radiological and chemical analytical results meet the pretreatment discharge requirements, the wastewater will be disposed of at their facility or other approved location in writing and with Navy permission; otherwise, it will be disposed of off-site at an approved facility as profiled. Note: TtEC will determine the most cost effective and environmentally sound disposal option and present to the Navy for concurrence prior to disposition.

3.1.4 Used Sampling Supplies and PPE

Used sampling supplies and used PPE will be collected and maintained with the waste generated at each site to the extent possible – either with the soil and/or construction debris waste streams described above. It is anticipated that this waste stream will be nonhazardous as only incidental contact with contaminants will occur. For instance, used PPE and sampling equipment will generally be profiled with the soil and/or construction debris generated at a particular site and will generally comprise less than 1 percent of the total waste stream. However, used PPE and sampling equipment is anticipated to be nonhazardous; and it is possible that it may be able to be profiled and disposed of with waste streams from another site with CSO and Navy permission.

3.1.5 Ordinary Trash

Ordinary trash consists of paper material, plastic cups and bags, trash bags, food waste, and non-contaminated materials. Ordinary trash will be bagged and disposed of in the site office dumpster. Waste from removal activities will not be mixed with ordinary trash.

3.1.6 Green Waste/Vegetation

Grass cuttings along with chipped branches, small trees, and bushes will be spread on site a location(s) approved by the Contracting Officer or designee. Large trees and stumps will be removed and disposed of at an appropriate facility.

3.1.7 Oily Rags and Sorbents

Oily rags and sorbent materials may be generated in the event of a spill or during vehicles or equipment servicing (greasing equipment, changing hydraulic hoses, refueling, etc.). If generated, these wastes will be contained in a closed metal container marked "oily rags and sorbents," managed as nonhazardous waste and will be disposed of off-site in a solid waste landfill. Oily rags and sorbents shall not have free liquids. Free liquids (if generated) shall be collected in a small drum for separated disposal or recycling. The sorbent materials will be bagged. Bags will be containerized into a drum until disposal occurs. The containers will be properly marked as to the contents. The oil waste will be disposed of at the end of the project in accordance with required procedures.

3.1.8 Sanitary Wastes

Personnel employed on this project will use chemical toilets and designated hand washing stations. The toilets and sanitary hand washing stations will be serviced regularly by the supplier and emptied before reaching full capacity.

3.1.9 Container Labeling

All project hazardous waste must be classified according to State of Maine and RCRA labeling requirements while onsite. In addition, prior to transport of waste off-site, waste containers must be marked/labeled in accordance with RCRA (as applicable) and DOT Hazardous Material

Regulations if it meets one of the nine DOT hazard classifications. This includes labels and placards, as required. All RCRA hazardous wastes are DOT hazardous materials. An ESQ Specialist will assist in the proper classification of waste for transportation and disposal. Trained personnel, as required by DOT regulations at 49 CFR Part 172, Subpart H, will conduct all DOT functions.

Containers of presumed or known hazardous waste will be marked or labeled in indelible ink as "Potentially Hazardous Waste – Pending Analysis" until the actual waste determination is made when the results of waste analysis are received in a timely manner. An accumulation start date (the date the first drop of material was placed in container) will be marked on any container of suspected hazardous waste. A container log will be used to track contents, accumulation start date, sample identification number, sampling date, and disposal date. If containers are determined to contain nonhazardous waste, they will be labeled accordingly and segregated from hazardous wastes. If containers are determined to contain hazardous waste, they will immediately be labeled with a completed "Hazardous Waste" label that will include:

- U.S. EPA identification number of the generator
- Name and address of the generator
- EPA waste code
- DOT shipping name (prior to off-site shipment)
- Description of contents
- Date of generation

An inventory of waste containers will be maintained. In addition, weekly inspections of container storage areas will be conducted and logged while wastes remain in these areas to ensure the integrity of the containers and secondary containment, to check for leaks or spills, and to ensure that labels and markings are in good condition.

3.2 Waste Accumulation Areas

3.2.1 Hazardous Waste Accumulation Area

If hazardous waste is generated and accumulated on-site, TtEC will implement the following hazardous waste storage area requirements:

- A "Danger Hazardous Waste Area – Unauthorized Personnel Keep Out" sign will be posted at each waste accumulation area at a location that can be seen from any approach. The signs will be legible from a distance of at least 25 feet.
- Aisle space will be maintained to allow unobstructed movement of personnel, fire-protection equipment, spill-control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.
- The following emergency equipment will be located or available to personnel during active waste management activities at each accumulation area:

- A hand-held two-way radio, capable of summoning emergency assistance
- Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment
- A spill-response kit for minor spills to include a shovel, adsorbent pads and/or "kitty litter," and a collection container

Bulk quantities of fuel, oil, or other hazardous material will not be stored on-site. These materials will be managed by an off-site contractor who will, on an as-needed basis, perform equipment fueling and maintenance activities.

3.2.2 Nonhazardous Waste Accumulation Areas

No prescribed markings or emergency equipment are required for nonhazardous waste storage areas. The general storage requirements for nonhazardous wastes as described in Section 3.1.1 should be followed.

3.3 Inspections and Documentation

While all waste accumulation areas will be informally inspected on a daily basis when work activities are being performed, formal inspections of all container accumulation and stockpile areas will be conducted and recorded at least weekly in accordance with MEDEP regulations. The Safety Health Manager (SHM) or designee (onsite Waste Coordinator, TBD) will conduct inspections. Inspections will be recorded on a weekly inspection checklist. The container storage area(s) will be inspected to ensure the following:

- The containers will be checked for good condition. If a container is not in good condition or appears to be leaking, the waste will be transferred to another container.
- All containers used will be checked to be sure that they are made of material that will not react with, and are otherwise compatible with, the hazardous waste to be stored.
- The containers will be checked to ensure that they remain closed at all times, except when adding or removing waste.
- The container label will be checked to ensure that it is filled out properly and to check the waste accumulation date.

Documentation requirements apply to all waste managed during project activities. Field records will be kept of all waste-generation activities. In addition, the following information will be recorded in the log:

- Description of waste-generating activities
- Location of waste generation
- Type and volume of waste
- Date and time of generation
- Description of any waste sampling
- Name of person recording information

- Name of field manager at time of generation

4.0 RADIOACTIVE WASTE ACCUMULATION AND STORAGE

4.1 Low-level Radioactive Waste

Radiologically impacted soil, construction debris, building material, and used PPE and sampling supplies, etc. will be placed in covered and lined roll-off containers (or other suitable container) provided by the Navy LLRW disposal contractor. Each container will be assigned a unique identification number by the Navy LLRW disposal contractor, and each will be properly inventoried and labeled. Inventories will include material description and isotopic identification, if available. The contents of each container will be recorded on the inventory sheet (Intermodal Tracking Sheet). From the information provided on the Intermodal Tracking Sheet, a Bin Field Content Sheet and LLRW Field Bin Daily Report, documenting the contents of the container, will be completed. The Bin Field Content Sheet will be kept with the container. The LLRW Field Bin Daily Report will be forwarded to the Database Group where the information is entered into the database.

Containers will be stored in a designated and posted radioactive material storage area under the authority of TtEC's RML or State Agreement RML, as required. Storage areas will be at the site where the waste originated until removed by the Navy LLRW disposal contractor. Containers will be secured to prevent unauthorized access to their contents.

The wastewater will be managed as LLRW wastewater until the chemical and radiological characteristics are known.

4.2 Container Labeling

Each container of LLRW will be labeled and placed in a designated radioactive material storage area. The waste containers will be posted with a "Caution Radioactive Material" sign. The sign will also note the maximum surface radiation level (measured in microroentgens per hour). For bin type containers, the posting will be placed on all four sides. An inventory of contents (Bin Field Content Sheet) will be posted on the outside of the container. The inventory contents and radionuclide and specific activity (if available) will be entered into the database.

4.3 Waste Accumulation Areas

TtEC will implement the following for radioactive waste stored within a designated radioactive material storage area:

- A "Caution, Radiologically Controlled Area, Radioactive Materials Area, RWP Required for Entry, Authorized Personnel Only" placard will be posted at each radioactive waste storage area at a location that can be seen from any approach. The signs will be legible from a distance of at least 25 feet.

- Aisle space will be maintained to allow for the unobstructed movement of personnel, fire-protection equipment, spill-control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.
- The following emergency equipment will be located or available to personnel during active waste management activities at each accumulation area:
  - A hand-held two-way radio, capable of summoning emergency assistance
  - Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment

4.4 Inspections and Documentation

Waste accumulation areas will be informally inspected on a daily basis when work activities are being performed. The Certified Health Physicist/Radiation Safety Officer (or designee) will conduct inspections. The container storage area(s) will be inspected to ensure the following:

- The containers will be checked for good condition. If a container is not in good condition, the Navy LLRW disposal contractor will be notified.
- The containers will be checked to ensure that they remain closed and secured at all times, except when adding or removing waste.
- The container label will be checked to ensure that it is filled out properly and is visible.

Documentation requirements apply to all waste managed during project activities. Field records of all waste-generating activities will be kept. All pages of the field data record log (Intermodal Tracking Sheet) will be initialed and dated by the technician who is entering the data. In addition, the following information will be recorded on the Bin Field Content Sheet:

- Description of waste-generating activities
- Location of waste generation
- Type and volume of waste
- Date of generation
- Description of any waste sampling (if necessary)
- Initials of technician entering data

Prior to transfer of the bin to the Navy LLRW disposal contractor, the activity in each waste container will be measured in picocuries per gram, and maximum contact radiation levels will be measured in milliroentgens per hour. This information will be reported on the Field Content Sheet & Transfer Document for transfer to the Navy LLRW disposal contractor.

5.0 TRANSPORTATION AND WASTE DISPOSAL REQUIREMENTS

Elements of off-site transportation and waste disposal include disposal facility selection, waste loading and transportation, and vehicular traffic control related to the loading and the off-site transportation and disposal of project waste, including recordkeeping.

The following subsections present transportation and disposal requirements for project wastes that may be transported from the site.

5.1 Disposal Facility Requirements

Waste profiles will be prepared for non-LLRW solid wastes when required (typically for hazardous and nonhazardous wastes, excluding recyclable materials). Multiple profiles may be needed, depending on the classification of various waste streams and the manner or location of disposition. For instance, RCRA-regulated wastes (i.e., RCRA hazardous) and/or non-RCRA hazardous and nonhazardous waste may be generated during the project. The waste classification could potentially require the use of several different disposal facilities. Profile sheets must be representative of the whole wastestream that will be disposed of under that profile.

If the waste is determined to be RCRA-regulated hazardous waste, then the nature of the underlying hazardous constituents and the facility-specific treatment authorizations must be determined. The intended disposal facility must be capable of and permitted to receive the waste as profiled and be capable of treating any underlying hazardous constituents as per the RCRA land disposal restriction regulations.

If the non-LLRW wastewater meets the Brunswick Sewer District pretreatment discharge requirements for their publicly owned treatment works, the wastewater will be discharged in accordance with their discharge permit requirements, which may include direct discharge to a nearby manhole or transfer to their facility with permission granted in writing and Navy permission. If the wastewater does not meet discharge requirements, the wastewater will be loaded and transported to a disposal facility permitted to accept this wastestream. Note: TtEC will determine the most cost effective and environmentally sound disposal option and present to the Navy for concurrence prior to disposition.

All waste containing CERCLA hazardous substances, pollutants, or contaminants will be disposed of off-site at a facility authorized and permitted to accept CERCLA waste under the CERCLA off-site rule regulation, 40 CFR 300.440.

Once the waste classification is known and the disposal facility is under subcontract, the type of facility and address, EPA ID number (if required), facility point of contact and phone number, state and/or federal agency point of contact, a list of any and all notices of violations in the last 3 years, date of last inspection, copies of all environmental permits, copies of the facility's weigh scale certificate, and analytical requirements and frequencies for each facility will be provided to the CSO.

5.2 Profiles

All waste will be profiled by a TtEC ESQ Scientist prior to disposal. Profiles will be prepared specific to the particular disposal facility and will contain process information, characterization

decisions, waste composition, and analytical data that is representative of that particular wastestream. Profiles and associated analytical data will be forwarded by the ESQ Scientist to the CSO for review and signature a minimum of five days prior to shipment off-site. The ESQ Scientist will then forward the profile to the transporter for submission to the disposal facility. A copy of the signed profile and analytical data will be maintained in the project files. Upon approval of the profile by the disposal facility, the facility will issue a profile number and will authorize shipment of the waste to the facility.

5.3 Hazardous Waste Manifests and LDR Certification

All hazardous waste transported from the site will be accompanied by a Hazardous Waste Manifest. A DOT-trained individual will prepare Hazardous Waste Manifests with assistance from the ESQ Scientist. The ESQ Scientist will forward a draft manifest to the CSO for review and approval and will arrange for the CSO representative to sign the manifest. TtEC does not sign manifests. The CSO representative is responsible for reviewing and signing all waste documentation. Prior to the manifest being signed, TtEC will ensure that pretransport requirements of packaging, labeling, marking, and placarding are met according to 49 CFR Parts 100 through 177.

The Navy will receive one original copy (designated at the bottom of the manifest as "generator's initial copy") of the manifest; the remaining copies will be given to the transporter. If possible, two good quality photocopies will be made of the top manifest copy after it has been signed by the transporter. One photocopy and the "generator's initial copy" will be returned to the CSO by the site waste coordinator who will retain one copy for recordkeeping requirements. The second photocopy will be retained on-site in a central project file. The signed terminal (original) copy of a hazardous waste manifest must be received by the generator no later than day 35 after shipment. If it is not, an exception report may be required.

A land disposal restriction (LDR) form will accompany any shipments of RCRA hazardous waste to the treatment, storage, and disposal facility (TSDF). The TSDF must be notified prior to sending the waste. Copies of LDRs will be provided to the CSO for signature and approval and will be maintained in the project file with the profile sheets.

5.4 Nonhazardous Waste Manifests

All nonhazardous waste transported from the site will be accompanied by a Nonhazardous Waste Manifest. Transporters will prepare Nonhazardous Waste Manifests with assistance from the ESQ Scientist. The ESQ Scientist will forward a draft manifest to the CSO or other designated representative for review and approval and will arrange for the CSO or other designated representative to sign the manifest a minimum of five days prior to shipment off-site. The CSO or other designated representative will be responsible for reviewing and signing all waste documentation, including waste profiles and manifests. TtEC does not sign manifests. Prior to the manifest being signed, TtEC will ensure that pretransport requirements of packaging, labeling, marking, and placarding (if the nonhazardous waste is classified as a DOT hazardous material) are met according to 49 CFR Parts 100 through 177.

If possible, two good quality photocopies will be made of the top manifest copy after it has been signed by the transporter. The CSO will receive one copy of the manifest and one copy of the signed first cover sheet; the remaining copies will be given to the transporter. The manifest will be returned to the Navy signatory official to be placed on file. The photocopy of the manifest will be maintained in a central project file.

The generator (CSO) is responsible for ensuring that the signed terminal manifest is received and that the waste is disposed of at the proper designated facility since the generator will be the one who receives the signed terminal manifest and is contacted should there be an issue with the waste. The waste coordinator will track waste shipments to ensure original manifests are returned and to ensure waste is disposed of at the proper designated facility. The waste coordinator will work with the disposal facility to ensure manifests along with certified weight tickets are provided to the CSO within 10 days of waste delivery. The certified weight tickets will contain, at a minimum, the gross truck weight, truck tare weight, the net weight of the materials, and the numerical load for the day. The weight tickets will also contain the transportation company name, and the plate numbers of the transportation vehicle.

5.5 Manifest Review

Manifests will be reviewed by the site waste coordinator immediately prior to shipment to ensure accuracy and that all required fields are filled in. The Site Waste Coordinator will be responsible for ensuring that the generator (CSO) has signed and dated the manifest, the transporter has signed and dated the manifest, and that all appropriate fields are filled in and that the original manifest goes with each load that leaves the site. At the end of each day that shipment occurs, the DOT-trained Project Quality Control Manager (or designee) will review all copies of manifests shipped that day to ensure accuracy. If any mistakes are noted, the ESQ Scientist will be contacted as soon as possible. During inspections, the SHM will review a minimum of 10 percent of the manifests for accuracy.

5.6 Transportation Requirements

All transportation companies will be approved by TtEC Procedure EHS 1-4, Subcontractor Selection and Management, prior to use to ensure that they are qualified and permitted to transport the particular type of waste being transported and that they are authorized to transport to the designated location (i.e., special authorization is required by the DOT for out-of-state shipments).

The transportation subcontractor will have all appropriate licenses, medical certifications, permits, and registrations appropriate to the type of waste being shipped (including, but not limited to, a MEDEP hazardous waste transporter[s] registration, an EPA identification number (when required), DOT registration, and DOT Hazardous Material Registration) as well as proof of liability insurance coverage. Copies of the U.S DOT motor carrier safety rating and solid and hazardous waste transportation permits for each state in which the material will be transported will be provided to the CSO for each of the transporters used. Transportation documentation will

comply with DOT regulations 49 CFR Parts 100 through 178 and will be prepared by appropriately trained TtEC personnel.

Containers will be marked, labeled, and/or placarded prior to off-site transport to meet DOT requirements. TSDF waste profile sheets, LDR notifications, waste manifests, and shipping documents (as applicable) will be prepared by properly trained TtEC personnel for the appropriate Navy officials to review and sign.

If an on-site truck scale is not available, only transporters with built-in calibrated scales will be used to ensure that DOT weight restrictions are not exceeded and to provide accurate weights for all waste manifests. It will be the dual responsibility of site personnel and the transportation subcontractor to document truck weights before trucks exit NASB.

Waste hauling trucks, if not enclosed, will be covered with tarps prior to leaving the site. Appropriate placards will be placed on each transport vehicle, as required by DOT. In addition, a hazardous waste manifest or nonhazardous waste manifest, as appropriate, will accompany all wastes that leave the site.

6.0 TRAINING/CERTIFICATION REQUIREMENTS

Employees involved in waste management operations will be trained at the awareness and function or task-specific level to perform site specific waste management tasks assigned to them under supervision of the designated and experienced TtEC project waste coordinator. This training will help ensure they are familiar with the requirements of their job assignments related to management of wastes. It is not anticipated that hazardous wastes will be generated on this project. If hazardous waste is generated, those who oversee the management of hazardous wastes (only a selected few designated persons) will have additional training as required to ensure the requirements are implemented.

Personnel who perform or oversee DOT-related activities (such as selecting DOT packaging, placing DOT markings and labels on packages, or preparing shipping papers for DOT regulated material/waste) will be DOT-trained. DOT and waste management training records will be maintained in TtEC Corporate ESQ Department files and will be available, as necessary, to on-site personnel. DOT training is required every 3 years (2 years for air shipment).

7.0 DOCUMENTATION AND RECORDS RETENTION

This section presents project requirements for waste management documentation and records, and their retention.

7.1 Documentation

The information contained in this section applies to all waste managed during project activities at each site where wastes are generated. Field records will be kept in a bound, numbered field notebook. Information to be recorded includes, but is not limited to, the following:

- Description of waste-generating activities
- Location of waste generation (including depth, if applicable)
- Type of waste
- Date and time of generation
- Name of person recording information
- Name of field manager at time of generation and at time of disposal
- Sample identification numbers and results or generator knowledge regarding waste characterization
- Inspection logs
- Waste documentation, including the following:
  - Waste profile sheets
  - LDR certification (as applicable)
  - Hazardous waste manifest
  - Nonhazardous waste manifest
  - Trip tickets or bills of lading
- Scale or weight tickets

7.2 RCRA Records Retention

The Navy's designated manifest signatory official will be responsible for ensuring that all hazardous waste recordkeeping requirements are met, including retention of signed copies of manifests from the designated facility that received the waste. The copy must be maintained for at least 3 years from the date the waste was accepted by the initial transporter.

8.0 REFERENCES

DoD (Department of Defense), Department of Energy, Nuclear Regulatory Commission, and U.S. Environmental Protection Agency. 2000. Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). NUREG-1575. August.

ECC (Environmental Chemical Corporation) 2008. Site Management Plan, A Road Map for Environmental Cleanup, Naval Air Station Brunswick, Brunswick, Maine, December.

NAVSEA (Naval Sea Systems Command.). 2014. Final Historical Radiological Assessment, History of the Use of General Radioactive Materials 1943 to 2011, Naval Air Station Brunswick, Brunswick, Maine. March.

TtEC (Tetra Tech EC, Inc.). 2014. Basewide Radiological Management Plan, Former Naval Air Station Brunswick, Brunswick, Maine. In Progress.

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FIGURE

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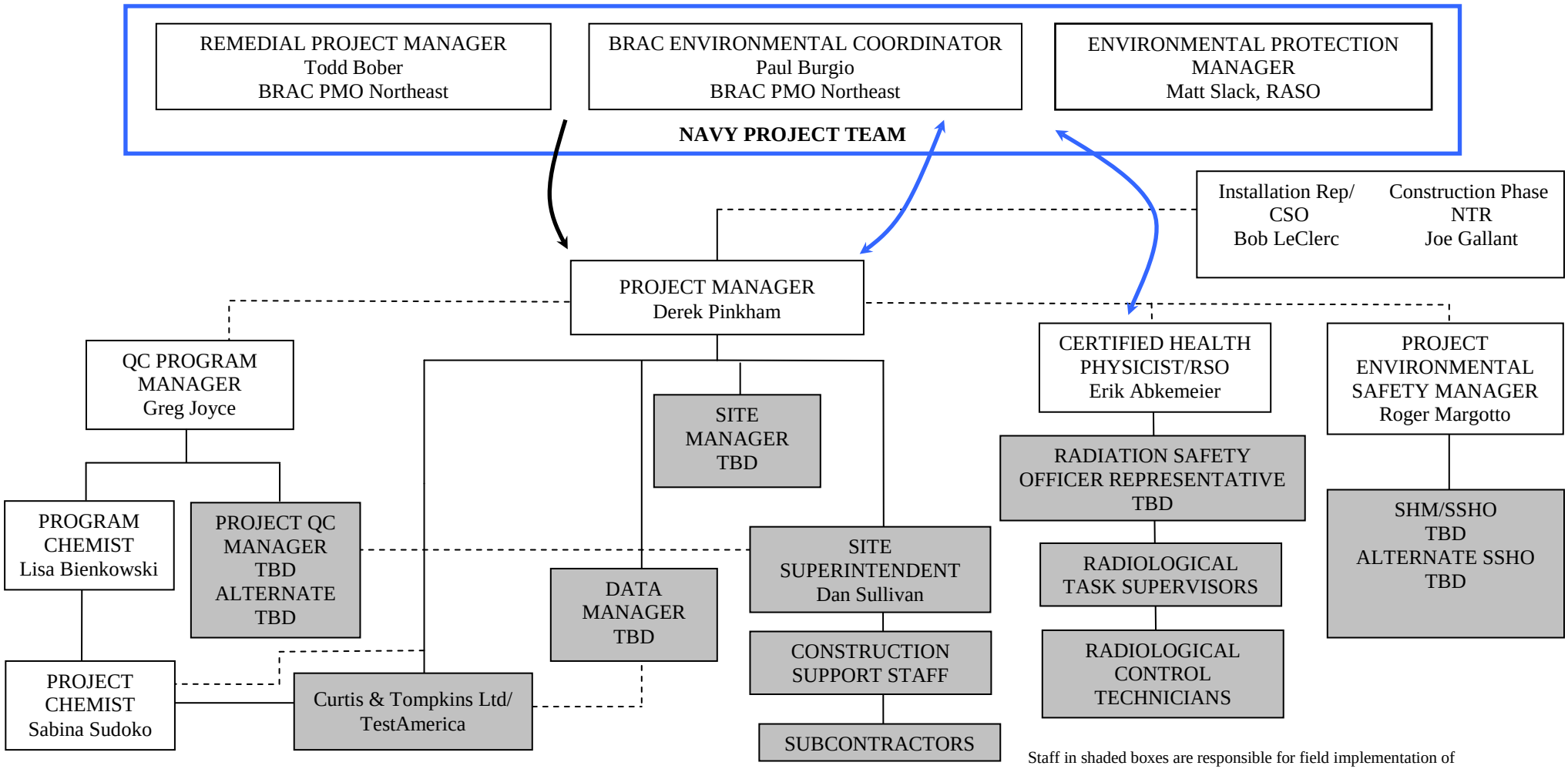
FIGURE 1-1

PROJECT ORGANIZATION CHART



Staff in shaded boxes are responsible for field implementation of activities under the Work Plan.

The Construction Manager (Jeff Bray) has overall responsibility for coordinating the activities of on-site technical staff.

Legend

- Formal reporting relationship
- Supporting relationship
- Primary lines of technical communication
- Line of technical direction (alternate where dashed)

Abbreviations and Acronyms:

BRAC PMO – Base Realignment and Closure Program Management Office
CSO – Contractor Site Office
RASO – Radiological Affairs Support Office
NTR – Navy Technical Representative
RSO – Radiation Safety Officer
QC – Quality Control
SHM – Safety and Health Manager
SSHO – Site Safety and Health Officer

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